

CLAIMS

1 1. A magnetic head comprising:

2 a substrate;

3 a read head being fabricated upon said substrate;

4 a P1 pole being fabricated upon said read head;

5 a write gap layer being fabricated upon said P1 pole;

6 a P2 pole tip being fabricated upon portions of said write gap layer, wherein said P2 pole
7 tip includes a first portion being comprised of a seed layer material and a second portion being
8 comprised of electroplated material, and wherein said P2 pole tip has a width dimension W that
9 is formed in part from a thickness of said seed layer material portion and in part from a thickness
10 of said electroplated material portion.

1 2. A magnetic head as described in claim 1 wherein said first portion of said P2 pole tip that
2 is comprised of said seed layer material forms a sidewall of said P2 pole tip.

1 3. A magnetic head as described in claim 1 wherein said seed layer material is formed with
2 a thickness of approximately 50 Å to approximately 500 Å, and said electroplated material is
3 formed with a thickness of approximately 100 Å to approximately 5000 Å.

1 4. A magnetic head as described in claim 3 wherein said seed layer material thickness is
2 approximately 250 Å and said electroplated material thickness is approximately 1500 Å.

1 5. A magnetic head as described in claim 3 wherein said seed layer material is comprised of
2 NiFe and said electroplated material is comprised of NiFe.

Sub 17
3 6. A hard disk drive comprising:
4 at least one hard disk being fabricated for rotary motion upon a disk drive;
5 at least one magnetic head adapted to fly over said hard disk for writing data on said hard
6 disk, said magnetic head including:
7 a substrate;
8 a read head being fabricated upon said substrate;
9 a P1 pole being fabricated upon said read head;
10 a write gap layer being fabricated upon said P1 pole;
11 a P2 pole tip being fabricated upon portions of said write gap layer, wherein said P2 pole
12 tip includes a first portion being comprised of a seed layer material and a second portion being
13 comprised of electroplated material, and wherein said P2 pole tip has a width dimension W that
is formed in part from a thickness of said seed layer material portion and in part from a thickness
of said electroplated material portion.

1 7. A hard disk drive as described in claim 6 wherein said first portion of said P2 pole tip that
2 is comprised of said seed layer material forms a sidewall of said P2 pole tip.

1 8. A hard disk drive as described in claim 6 wherein said seed layer material is formed with
2 a thickness of approximately 50 Å to approximately 500 Å, and said electroplated material is
3 formed with a thickness of approximately 100 Å to approximately 5000 Å.

1 9. A hard disk drive as described in claim 8 wherein said seed layer material thickness is
2 approximately 250 Å and said electroplated material thickness is approximately 1500 Å.

1 10. A hard disk drive as described in claim 8 wherein said seed layer material is comprised of
2 NiFe and said electroplated material is comprised of NiFe.

1 11. A method for fabricating a magnetic head, comprising the steps of:
2 fabricating a read head upon a substrate;
3 fabricating a P1 pole upon said read head;
4 fabricating a write gap layer upon said P1 pole;
5 fabricating a block of material upon said write gap layer, said block of material having a
6 sidewall disposed proximate a P2 pole tip location;
7 fabricating a seed layer upon said sidewall;
8 electroplating P2 pole tip material upon said seed layer, whereby a P2 pole tip is formed
9 having a width W that is comprised of a thickness of said seed layer material and a thickness of
10 said electroplated material;
11 fabricating an induction coil proximate said P2 pole tip;
12 fabricating a P3 pole above said induction coil in magnetic interconnection with said P2
13 pole tip; and
14 fabricating an encapsulation layer above said P3 pole.

1 12. A method for fabricating a magnetic head as described in claim 11 wherein said seed
2 layer is fabricated to a thickness of approximately 50 Å to approximately 500 Å.

1 13. A method for fabricating a magnetic head as described in claim 11 wherein said
2 electroplated material is fabricated to a thickness of approximately 100 Å to approximately 5000
3 Å.

1 14. A method for fabricating a magnetic head as described in claim 11 wherein said seed
2 layer is fabricated to a thickness of approximately 50 Å to approximately 500 Å, and wherein
3 said electroplated material is fabricated to a thickness of approximately 100 Å to approximately
4 5000 Å.

1 15. A method for fabricating a magnetic head as described in claim 14 wherein said seed
2 layer is fabricated to a thickness of approximately 250 Å and said electroplated material is
3 fabricated to a thickness of approximately 1500 Å.

1 16. A method for fabricating a magnetic head as described in claim 11 wherein said P2 pole
2 tip is fabricated within a P2 pole tip trench having width that is wider than said width W of said
3 P2 pole tip.

1 17. A method for fabricating a magnetic head as described in claim 11 wherein said block of
2 material is removed from said write gap layer following said electroplating of said P2 pole tip
3 material, and said P1 pole is notched in an ion milling step.

- 1 18. A method for fabricating a magnetic head as described in claim 14, wherein said seed
2 layer is comprised of NiFe and said P2 pole tip material that is electroplated upon said seed layer
3 is comprised of NiFe.

add
X2

FILED IN 6191660